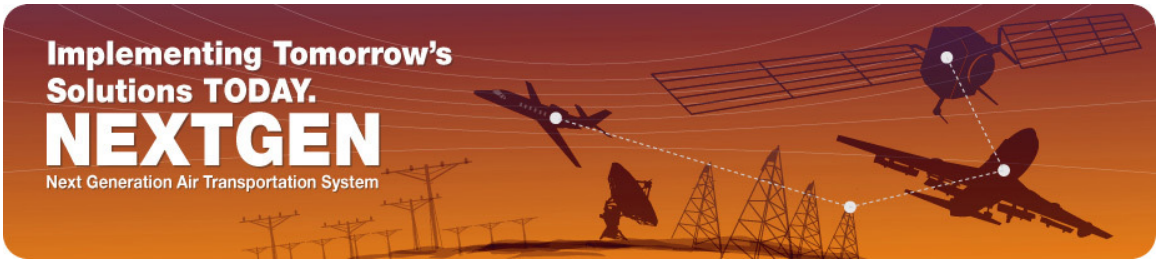

NextGen Network Enabled Weather (NNEW)

The goal of NextGen is to significantly increase the safety, security, capacity, and efficiency, of air transportation operations. A key NextGen capability is that information be available to all communities of interest in a net-enabled fashion. NextGen Network Enabled Weather (NNEW), one of five NextGen Transformational Programs, enables universal access to weather information to enable collaborative and dynamic NAS decision making.

NNEW is a key FAA contribution to an interagency effort to provide quick, easy, and cost effective access to weather information across all NAS users. Specifically, NNEW is the FAA program that will define and provide the FAA's portion of the interagency infrastructure known as the 4-Dimensional Weather Data Cube (4-D Wx Data Cube). The 4-D Wx Data Cube will provide common, universal access to aviation weather data. All categories of weather users will have improved access to timely and accurate weather information to support improved decision making, while enhancing safety. The 4-D Wx Data Cube consists of (1) weather data published in various databases within FAA, NOAA, and DoD, as well as commercial weather data providers that may participate; (2) registries/repositories needed to locate and retrieve published data; (3) the capability to translate among various standards that will be employed, and to provide data in user required units and coordinate systems; and (4) the capability to support retrieval requests for data volumes (such as along a flight trajectory). A subset of the data published to the 4-D Wx Data Cube will be designated the Single Authoritative Source (SAS). The SAS is that data that must be consistent (only one answer) to support collaborative (more than one decision maker) air traffic management decisions.

The initial NNEW requirements and architecture will be developed, and standards for publishing and accessing 4-D Wx Data Cube data will be completed. The interagency partners, led by NOAA, have program responsibilities and tasks to ensure their collaborative efforts are integrated into a single solution. The 4-D Wx Data Cube activities are being integrated so that the 4-D Wx Data Cube benefits extend across Government agencies to all aviation customers and NAS users, including international users. To verify the adequacy of the requirements, and technology readiness, FAA's NNEW program will conduct evaluations to resolve key technical questions and reduce implementation risk while demonstrating and assessing the operational benefits of a network-enabled weather environment to the FAA, other agency, and aviation system users. Additionally, FAA will develop and deploy network-enabled, operations service adaptors for FAA-owned weather sensors and systems to support multiagency data access to the virtual weather network. This work will support the first operational implementation phase of the 4-D Wx Data Cube. In this phase NNEW will enable common access to advanced weather forecast and observation data by FAA users and systems, such as TFM decision-support tools. In subsequent phases, the FAA will supplement additional data sources, expand SAS requirements, and participate in 4-D Wx Data Cube governance to ensure support for progressively more sophisticated decision-support tools required by NextGen operations.